CLAIMS:

1. An electro-optic device comprising a photosensitive surface which surface is arranged to comprise a plurality of independently-gatable portions.

2. An electro-optic device as claimed in claim 1, wherein the device comprises an image intensifier.

3. An electro-optic device as claimed in claim 2, wherein the image intensifier comprises a segmented photocathode.

4. An electro-optic device as claimed in claim 3, wherein the segmented photocathode comprises a photocathode layer and a segmented conductive layer adjacent the photocathode layer.

5. An electro-optic device as claimed in claim 1, wherein the device comprises a solid-stage imager.

6. An electro-optic device as claimed in claim 5, wherein the solid state imager comprises segmented imaging sections.

7. An electro-optic device as claimed in claim 5 or claim 6, wherein the solid state imager further comprises erasing means for erasing an image corresponding to one of the plurality of beams.

8. An electro-optic device as claimed in claim 5 or claim 6, wherein the solid state imager further comprises overwriting means for overwriting an image corresponding to one of the plurality of beams.

9. An imaging arrangement for two dimensional optical data represented by at least two beams of electromagnetic radiation, the arrangement comprising means for gating

and converting the beams into image data which means for gating and converting the beams into image data includes a single electro-optic device as claimed in any one of the claims 1 to 8 wherein the independently gated portions correspond to each of the at least two beams of electromagnetic radiation.

10. An imaging arrangement as claimed in claim 9, further comprising means for splitting an incident beam of electromagnetic radiation into at least two beams of electromagnetic radiation for application to the means for gating and converting the beams.

11. An imaging arrangement as claimed in claim 10, wherein the means for splitting the incident beam into a plurality of beams comprises chromatic means for splitting each of the plurality of beams into a plurality of differently-coloured beams.

12. An imaging arrangement as claimed in claim 11, wherein the independently-gated portions of the means for gating and converting the beams into image data correspond with each of the plurality of differently-coloured beams.

13. An imaging arrangement as claimed in any one of the claims 9 to 12, further comprising means responsive to an event for storing converted image data which was converted before the event.

14. An imaging arrangement for two dimensional optical data represented by an incident beam of electromagnetic radiation, the arrangement comprising:

means for splitting the incident radiation beam into a plurality of beams,

means for gating and converting the beams into image data,

wherein the means for gating and converting the beam into image data includes a single electro-optic device having independently-gated portions corresponding to each of the plurality of beams.

15. A method of imaging two dimensional optical data represented by a beam of electromagnetic radiation, the method comprising:

splitting the radiation beam into a plurality of beams;

gating the plurality of beams;

converting the gated beams into image data;

wherein the gating of the plurality of beams is performed using a single electro-optic device having independently-gated portions corresponding to each of the plurality of beams.

16. Apparatus for providing a plurality of images N from one input image, the apparatus comprising:

means for transmitting the input image to an input of a reflecting tunnel;

a reflecting tunnel having an input and output between which are provided at least two reflecting planes, each of which reflecting planes is orthogonal to any adjacent reflecting planes; and

an output objective lens for receiving the output images from the reflecting tunnel.

17. Apparatus as claimed in claim 16, wherein the reflecting tunnel is provided with four reflecting planes.

18. Apparatus as claimed in claim 16 or claim 17, wherein the planes of the reflecting tunnel are parallel to an optical axis between the input objective lens and the output objective lens.

19. Apparatus as claimed in any one the claims 16 to 18, wherein the cross-section of the reflecting tunnel is square.

20. Apparatus as claimed in any one of claims 16 to 19, wherein the length L of the reflecting tunnel is at least L where

$$L = K \times (F/No) \times H \times RI$$

where $K^2 \geq N$

F/No = input OG F/No

H = height of the tunnel and

RI is the refractive index for the reflecting tunnel.

21. Apparatus as claimed in claim 20, wherein K is an odd integer greater than one.

22. Apparatus as claimed in any one of the claims 16 to 21, wherein the reflecting planes of the reflecting tunnel comprise plane mirrors.

23. Apparatus as claimed in any one of the claims 16 to 22, wherein the reflecting planes of the reflecting tunnel comprise surfaces of the tunnel which comprises optical material.

24. A method of manufacturing apparatus for providing a plurality of images N from one input image, the method comprising:

determining an integer K greater than one such that $K^2 \geq N$;

selecting an input objective lens having f number (F/No) and image height H values in response to input signals having a low numerical aperture;

selecting a material for a reflecting tunnel which material has a refractive index RI;

determining the minimum length L of the reflecting tunnel from the equation:

$L = K \times (F/No) \times H \times RI$;

constructing a tunnel having height H and a length of L or greater;

arranging the input objective lens at a first end of the reflecting tunnel; and

arranging an output objective lens at a second end of the tunnel.

25. Apparatus as claimed in any one of the claim 24, wherein the reflecting planes of the reflecting tunnel comprise plane mirrors.

26. Apparatus as claimed in any one of the claim 24 wherein the reflecting planes of the reflecting tunnel comprise surfaces of the tunnel which comprises optical material.

27. A method as claimed in any one of the claims 24 to 26, wherein the output objective lens is a wide angle, short focal length objective lens.

28. A method as claimed in any one of the claims 24 to 27, wherein the cross section of the tunnel is square.

29. A method as claimed in any one of the claims 24 to 28 wherein the tunnel has four reflecting planes.

30. An electro-optic device for generating a plurality of gated images N from one input image, the apparatus comprising:

means for transmitting the input image to an input of a reflecting tunnel;

a reflecting tunnel having an input and an output between which are provided at least two reflecting planes, each of which reflecting planes is orthogonal to any adjacent reflecting planes;

an output objective lens for transmitting light from an output of the reflecting tunnel to an electro-optic device; and

an electro-optic device comprising a photosensitive surface which surface is arranged to comprise a plurality of independently-gatable portions.

31. Apparatus as claimed in claim 30, wherein the electro-optic device comprises an image intensifier.

32. Apparatus as claimed in claim 31, wherein the image intensifier comprises a segmented photocathode.